

Please provide the following information, and submit to the NOAA DM Plan Repository.

Reference to Master DM Plan (if applicable)

As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

1. General Description of Data to be Managed**1.1. Name of the Data, data collection Project, or data-producing Program:**

Bridge Creek IMW database - Bridge Creek Restoration and Monitoring Project

1.2. Summary description of the data:

The incised and degraded habitat of Bridge Creek is thought to be limiting a population of ESA-listed steelhead (*Oncorhynchus mykiss*). A logical restoration approach is to improve their habitat through reconnecting the channel with portions of its former floodplain (now terraces) to increase both stream and riparian habitat complexity. Using conventional restoration techniques to achieve such objectives can be quite costly, because it involves moving and grading large volumes of fill with heavy equipment that exposes bare ground, and is usually followed by extensive revegetation efforts. Here, we seek a cost-effective, process-based approach to restore geomorphic, hydrologic and ecological functions of this degraded system helping a small, extant beaver population build longer-lived dams.

Currently, the beaver population is limited because their dams are short-lived. Most beaver dams are constructed within the incision trench and during high discharge events; the full force of flood waters are concentrated on these dams rather than dissipating across floodplains. Consequently most dams breach and fail within their first season. The primary hypothesis we are testing is that by assisting beaver to create stable colonies and aggrade incised reaches of Bridge Creek, there will be measurable improvements in riparian and stream habitat conditions and abundance of native steelhead. The main restoration design challenge is to help beaver build dams that will last long enough to lead to the establishment of stable colonies. If this can be accomplished, the beaver dams should promote enough aggradation to reverse channel incision and reap a number of well documented positive ecosystem benefits associated with dynamic beaver dam complexes that will benefit steelhead and other species.

We are assisting the beaver using an extremely simple and cost-effective restoration treatment. The treatment involves installing round wooden fence posts across potential floodplain surfaces (now terraces) and the channel, approximately 0.5 to 1 m apart and at a height intended to act as the crest elevation of an active beaver dam. This report provides details of the design rationale and design hypotheses employed and

summarizes the placement of the 84 BDS structures installed in four reaches in 2009. Additionally, the ongoing monitoring campaign devised to test these design hypotheses is discussed and some preliminary observations from the first year of the campaign are presented. Five variants of the restoration treatment were used; post lines only, post lines with wicker weaves, construction of starter dams, reinforcement of existing active beaver dams, and reinforcement of abandon beaver dams. The biodegradable posts are intended to buy enough time for (1) beaver to occupy the structures and build on or maintain the structures as their own dams, and (2) for aggradation in the slackwaters of the pond from the dam to take place and promote reconnection with a floodplain (terrace).

Just as with natural beaver dams, individual dams are expected to be transient features on the landscape, expanding and contracting, coming and going as they lose functionality for beaver (e.g. when a pond fills with sediment). The treatment design is geared to saturate four distinct reaches of Bridge Creek with beaver dam support (BDS) structures so that enough potential dams are available to the current beaver population that they can pick and choose the best sites to establish stable multi-dam complexes to support healthy and persistent colonies.

Physical and biological data.

1.3. Is this a one-time data collection, or an ongoing series of measurements?

Ongoing series of measurements

1.4. Actual or planned temporal coverage of the data:

2010-01-01 to Present

1.5. Actual or planned geographic coverage of the data:

W: -120.1844, E: -120.1844, N: 44.5861, S: 44.5861

Bridge Creek, OR: Includes the lower 30 km of Bridge Creek watershed and Gable and Bear Creek tributaries as well as Murderers Creek on the SF John Day R.

1.6. Type(s) of data:

(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)
Table (digital)

1.7. Data collection method(s):

(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)

Instrument: Depth-Temperature Sensor

Platform: Water based Platforms - Bouy

Physical Collection / Fishing Gear: Not Applicable

1.8. If data are from a NOAA Observing System of Record, indicate name of system:

1.8.1. If data are from another observing system, please specify:

2. Point of Contact for this Data Management Plan (author or maintainer)**2.1. Name:**

Northwest Fisheries Science Center (NWFSC)

2.2. Title:

Metadata Contact

2.3. Affiliation or facility:

Northwest Fisheries Science Center (NWFSC)

2.4. E-mail address:

nmfs.nwfsc.metadata@noaa.gov

2.5. Phone number:

206-860-3200

3. Responsible Party for Data Management

Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.

3.1. Name:

Michael M Pollock

3.2. Title:

Data Steward

4. Resources

Programs must identify resources within their own budget for managing the data they produce.

4.1. Have resources for management of these data been identified?

No

4.2. Approximate percentage of the budget for these data devoted to data management (specify percentage or "unknown"):

5

5. Data Lineage and Quality

NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.

5.1. Processing workflow of the data from collection or acquisition to making it publicly accessible

(describe or provide URL of description):

Lineage Statement:

These data were collected and processed in accordance with established protocols and best practices under the direction of the project's Principal Investigator. Contact the

dataset Data Manager in section 3 for full QA/QC methodology.

5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:

5.2. Quality control procedures employed (describe or provide URL of description):

These data were collected and processed in accordance with established protocols and best practices under the direction of the project's Principal Investigator. Contact the dataset Data Manager in section 3 for full QA/QC methodology.

6. Data Documentation

The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.

6.1. Does metadata comply with EDMC Data Documentation directive?

Yes

6.1.1. If metadata are non-existent or non-compliant, please explain:

6.2. Name of organization or facility providing metadata hosting:

NMFS Office of Science and Technology

6.2.1. If service is needed for metadata hosting, please indicate:

6.3. URL of metadata folder or data catalog, if known:

<https://www.fisheries.noaa.gov/inport/item/18014>

6.4. Process for producing and maintaining metadata

(describe or provide URL of description):

Metadata produced and maintained in accordance with the NOAA Data Documentation Procedural Directive: https://nosc.noaa.gov/EDMC/DAARWG/docs/EDMC_PD-Data_Documentation_v1.pdf

7. Data Access

NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.

7.1. Do these data comply with the Data Access directive?

Yes

7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?

7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:

7.2. Name of organization of facility providing data access:

Northwest Fisheries Science Center (NWFS)

7.2.1. If data hosting service is needed, please indicate:

No

7.2.2. URL of data access service, if known:

https://www.webapps.nwfsc.noaa.gov/apex/parr/water_temperature_data_for_bridge_creek_watersh

https://www.webapps.nwfsc.noaa.gov/apex/parrdata/inventory/tables/table/water_temperature_data

7.3. Data access methods or services offered:

At this time, contact the Data Manager for information on obtaining access to this data set. In the near future, the NWFS will strive to provide all non-sensitive data resources as a web service in order to meet the NOAA Data Access Policy Directive (<https://nosc.noaa.gov/EDMC/PD.DA.php>).

7.4. Approximate delay between data collection and dissemination:

0 days

7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:

No Delay

8. Data Preservation and Protection

The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.

8.1. Actual or planned long-term data archive location:

(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)

NCEI_MD

8.1.1. If World Data Center or Other, specify:

8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:

8.2. Data storage facility prior to being sent to an archive facility (if any):

Northwest Fisheries Science Center - Seattle, WA

8.3. Approximate delay between data collection and submission to an archive facility:

180

8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection

The Northwest Fisheries Science Center facilitates backup and recovery of all data and IT components which are managed by IT Operations through the capture of static (point-in-time) backup data to physical media. Once data is captured to physical media (every 1-3 days), a duplicate is made and routinely (weekly) transported to an offsite archive facility where it is maintained throughout the data's applicable life-cycle.

9. Additional Line Office or Staff Office Questions

Line and Staff Offices may extend this template by inserting additional questions in this section.